

IN THE CLAIMS

- 1. (currently amended)** A method of manufacturing a semiconductor device, comprising:
 - forming a film on a semiconductor substrate;
 - performing a dry etching process for removing said film while monitoring a plasma emission at a plurality of wavelengths;wherein said performing said dry etching process includes determining an endpoint of said dry etching process based on a change of luminous intensity obtained by a correlation of a plurality of luminous intensities of the plasma emission at said plurality of wavelengths.
- 2. (original)** The method as set forth in Claim 1, wherein said film contains nitrogen.
- 3. (original)** The method as set forth in Claim 1, wherein said film contains one of SiCN and SiON.
- 4. (currently amended)** The method as set forth in Claim 1, wherein said film is an insulating film provided on another film containing nitrogen in direct contact therewith.
- 5. (currently amended)** The method as set forth in Claim 1, wherein said film is an insulating film provided on another film containing one of SiCN and SiON in direct contact therewith.

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6. (original) The method as set forth in Claim 4, wherein said insulating film does not contain nitrogen.

7. (original) The method as set forth in Claim 5, wherein said insulating film does not contain nitrogen.

8. (original) The method as set forth in Claim 1, wherein said plurality of different wavelengths is an emission band having a luminous intensity peak in the proximity of 358 nm and in an emission band having a luminous intensity peak in the proximity of 387 nm.

9. (currently amended) A method of manufacturing a semiconductor device including a nitrogen-containing film formed on a semiconductor substrate and a film formed on said nitrogen-containing film in direct contact therewith, comprising:

performing a dry etching process for removing said film at least until reaching an interface with said nitrogen-containing film while monitoring plasma emission at a plurality of wavelengths;

wherein said performing said dry etching process includes determining an endpoint based on a change of luminous intensity obtained by a correlation of a plurality of luminous intensities of the plasma emission at said plurality of wavelengths.

10. (currently amended) A method of manufacturing a semiconductor device including a film formed on a semiconductor substrate and a nitrogen-containing film formed on said film in direct contact therewith, comprising:

performing a dry etching process for removing said nitrogen-containing film at least until reaching an interface with said film while monitoring plasma emission at a plurality of wavelengths;

wherein said performing said dry etching process includes determining an endpoint based on a change of luminous intensity obtained by a correlation of a plurality of luminous intensities of the plasma emission at said plurality of wavelengths.

11. (original) The method as set forth in Claim 9, wherein said film does not contain nitrogen.

12. (original) The method as set forth in Claim 10, wherein said film does not contain nitrogen.

13. (withdrawn from consideration) An apparatus of manufacturing a semiconductor device comprising:

a detecting unit which detects a variation of intensity of plasma emission at each of a plurality of wavelengths during a dry etching process of one of a nitrogen-containing film provided on a semiconductor substrate and a non-nitrogen film provided in direct contact with said nitrogen-containing film;

an arithmetic processing unit which executes arithmetic processing based on the detected variation; and

a control unit which determines an endpoint of said dry etching process in consideration of said arithmetic processing result.

14. (withdrawn from consideration) The apparatus as set forth in Claim 13, wherein said detecting unit detects an emission band having a luminous intensity peak in the proximity of 358 nm and an emission band having a luminous intensity peak in the proximity of 387 nm.

15. (currently amended) A method of manufacturing a semiconductor device, comprising the steps of:

forming a film on a substrate;

starting a dry etching of the film in a dry etching system;

monitoring a plasma emission from the dry etching system;

detecting an endpoint of the dry etching based on intensity a correlation of intensities of the monitored plasma emission at predetermined wavelengths; and

ending the dry etching of the film,

wherein intensity intensities of at least two wavelengths [[is]] are monitored at said monitoring the plasma emission.

16. (withdrawn from consideration) An apparatus of manufacturing a semiconductor device comprising:

a dry etching unit for etching a film formed on a substrate;

a monitoring unit for monitoring a plasma emission from the dry etching unit; and

a detecting unit for detecting endpoint of the dry etching based on intensity of the monitored plasma emission at predetermined wavelengths,

wherein said monitoring unit monitors intensity of at least two wavelengths.

17. (new) The method as set forth in Claim 1, wherein the correlation includes a total of the plurality of luminous intensities.

18. (new) The method as set forth in Claim 1, wherein the correlation includes a ratio of the plurality of luminous intensities that grants a greater weight to the luminous intensity of one of the plurality of wavelengths than that of another of the plurality of wavelengths.